

Appl. No. 10/028,548
Amd dated May 28, 2004
Reply to Office Action of January 30, 2004

REMARKS

This amendment is responsive to the Office Action dated January 30, 2004. Applicant has amended claims 1, 12, 23, 26, 27 and 31, and has canceled claims 4 and 34. Applicant has added claims 35-39. Claims 1-3, 5-33 and 35-39 are pending.

Claim Rejection Under 35 U.S.C. § 112

In the Office Action, the Examiner rejected claim 26 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended claim 26 for purposes of clarification. Applicant submits that claim 26, as amended, particularly points out and distinctly claim the subject matter, as required by 35 U.S.C. § 112, second paragraph.

Applicant notes that the Examiner determined that claim 26 would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112, second paragraph.

Claim Rejection Under 35 U.S.C. § 102

Claims 19-20

In the Office Action, the Examiner rejected claims 19-20 under 35 U.S.C. § 102(b) as being anticipated by Spurr et al. (U.S. Pat. No. 6,064,170). Applicant respectfully traverses the rejection.

In order to support an anticipation rejection under 35 U.S.C. § 102(b), it is well established that a prior art reference must disclose each and every element of a claim. E.g., Trintec Indus. Inc. v. Top-U.S.A. Corp., 63 USPQ2d 1597, 1599 (Fed. Cir. 2002). This well-known rule of law is commonly referred to as the "all-elements rule." If a prior art reference fails to disclose any element of a claim, then rejection under 35 U.S.C. § 102(b) is improper. Spurr et al. fail to disclose all features of the claimed invention, as required by 35 U.S.C. § 102(b), and provide no teaching that would have suggested the desirability of modification to include such features.

For example, Spurr et al. fail to teach or suggest varying the breadth of the swath during printing, as recited by Applicant's claims 19 and 20. Moreover, Spurr et al. fail to teach or

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suggest contracting the breadth of the swath and expanding the breadth of the swath, as recited by Applicant's claim 20.

The Examiner asserted that Spurr et al. disclose varying the width of the swath, citing Spurr et al. col. 9, line 66 to col. 10, line 3. This passage, which describes a perceived advantage of the Spurr system, does not describe varying the width of the swath during printing, as recited by claims 19 and 20. Rather, this passage describes a perceived benefit of the Spurr system that can be applied to printing using several different swath widths.

Hence, Spurr et al. do not describe or suggest changing a swath width during printing, as recited in claims 19-20. On the contrary, the Spurr system is based upon a width that is selected prior to printing and then remains constant during printing. Spurr et al. describe selecting a number of pixels (or channels) per motor step, and using the same number throughout printing. The reason that the number of channels is the same is that the Spurr system uses the selected number of channels to predict positional error. E.g., col. 9, lines 16-20; col. 10, lines 8-13, 20-24. Spurr et al. mention that the number of channels can vary "from one full image to the next," col. 16, lines 66-67, but do not disclose or suggest varying the number of channels while printing a single image. On the contrary, Spurr et al. describe selection of a swath constant width, and correcting for positional error as a function of the chosen width. E.g., col. 17, lines 5-24; col. 20, lines 20-67. Spurr et al. do not suggest varying the swath width during a print job, because the techniques deemed advantageous by Spurr et al. would not work if such were done.

For at least these reasons, Spurr et al. fail to disclose or suggest each and every limitation set forth in claims 19 and 20, and the Examiner has failed to establish a prima facie case for anticipation of Applicant's claims 19 and 20 under 35 U.S.C. § 102(b). Withdrawal of this rejection is requested.

Applicant notes that the Examiner determined that claims 21 and 22, which depend upon claim 19, recite allowable subject matter.

Claim 31

The Examiner rejected claim 31, but the basis for the Examiner's rejection is unclear. The Examiner discussed claim 31 in connection with rejection of claims 19-20 under 35 U.S.C. § 102(b) as being anticipated by Spurr et al. (U.S. Pat. No. 6,064,170). Claim 31 does not appear

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to be discussed anywhere else in the Office Action, except in the "Allowable Subject Matter" section, where claim 31 is referred to as a "rejected base claim." Applicant believes the Examiner intended to reject claim 31 under 35 U.S.C. § 102(b) as being anticipated by Spurr et al.

Independent claim 31 recites a system comprising a thermally sensitive color donor including colorant, a receptor positioned to receive colorant from the donor, a controller, and a set of lasers. Claim 31 also recites that each of the lasers receives a signal from the controller and emits a beam directed at the donor as a function of the signal, the beams forming a swath having a breadth. Claim 31 further recites that the controller varies the breadth of the swath during printing.

As discussed above, Spurr et al. fail to teach or suggest varying the breadth of the swath during printing, as recited by Applicant's claim 31.

Furthermore, Spurr et al. fail to teach or suggest incorporation of a controller that varies the breadth of the swath during printing, as recited by Applicant's claim 31. Spurr et al. disclose a controller that drives the stepper motor, e.g., col. 16, lines 32-40, but this controller does not vary the width of the swath. Rather, as discussed above, the controller drives the stepper motor in microstepping mode according to the width of the swath, which the controller does not change.

For these reasons, Spurr et al. fail to disclose or suggest each and every limitation set forth in claim 31, and the Examiner has failed to establish a prima facie case for anticipation of Applicant's claim 30 under 35 U.S.C. § 102(b). Withdrawal of this rejection is requested.

Applicant notes that the Examiner determined that claims 32-34, which depend upon claim 31, recite allowable subject matter.

Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claim 1-3, 5, 7-9, 11-17, 23-24, 27-28 under 35 U.S.C. § 103(a) as being unpatentable over Yen et al. (U.S. Pat. No. 5,992,962) in view of Klassen et al. (U.S. Pat. No. 5,677,714). Alternatively, the Examiner rejected claim 1-3, 5, 7-9, 11-17, 23-25, 27-30 under 35 U.S.C. § 103(a) as being unpatentable over Yen et al. in view of Kanematsu et al. (U.S. Pat. No. 6,183,055 B1).

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Applicant respectfully traverses the rejections to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 25

Applicant believes that the rejection of claim 25 was an inadvertent error. The Examiner offered no grounds for rejection of claim 25. On the contrary, the "Allowable Subject Matter" section of the Office Action listed claim 25 as including allowable subject matter, and specifically provided a rationale for allowance of claim 25. Accordingly, Applicant submits that claim 25 was inadvertently listed as rejected under 35 U.S.C. § 103(a).

Claims 1-3 and 5-11

Applicant has amended claim 1 to include elements recited in claim 4, and has canceled claim 4. The Examiner indicated that claim 4 recited allowable subject matter. In particular, the Examiner determined that inclusion of the limitation recited in claim 4 is not taught or fairly suggested in the prior art of record, alone or in combination. Accordingly, claims 1-3 and 5-11 are in condition for allowance.

In addition, claim 9 is further in condition for allowance because none of the cited references discloses or suggests a boundary between the set of second logical values and the first and second sets of first logical values being an irregular zigzag, as recited in claim 9. According to the Examiner, FIG. 6 of Yen et al. shows an irregular zigzag, but clearly this is not the case. The zigzag shown by FIG. 6 of Yen et al. is regular.

As described by Yen et al., the mask shown in FIG. 6 is formed "by having 4 by 4 triangular tiling clusters" arranged in a "mask pattern" that is repetitive. Col. 4, lines 50-63. Far from being irregular, the boundary between the dots shown in FIG. 6 of Yen et al. is the same throughout the mask, always conforming to the same pattern and never varying in any respect. By definition, the boundary between the dots is not "irregular," as recited in claim 9.

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Claims 12-18, 23-24

Applicant has amended independent claims 12 and 23 to clarify that the second triangle-like shape is different from the first triangle-like shape. The print mask shown in FIG. 6 of Yen et al. is made up of a set of tiling clusters that are the same as tiling cluster 60. Tiling cluster 60 includes an arrangement of black dots and an arrangement of white dots. The two arrangements are exactly the same shape. The only difference between the arrangements is that the shape of the black dots is rotated 180 degrees with respect to the shape of the white dots. This is true of both the "First Pass" mask and the "Second Pass" mask depicted in FIG. 6 of Yen et al. Yen et al. do not disclose or suggest first and second triangle-like shapes that are different from one another, as recited in claim 12, as amended.

Claims 13-18 depend on claim 12. Claim 12, as amended, is in condition for allowance, and therefore claims 13-18 are in condition for allowance as well. Similarly, claim 24 depends on claim 23, as amended, and is in condition for allowance.

Claims 27-30

Applicant has amended independent claim 27 to clarify that the second subset mask is different from the first subset mask. As discussed above, the print mask shown in FIG. 6 of Yen et al. is made up of a set of tiling clusters that are the same as tiling cluster 60. To the extent that tiling cluster 60 corresponds to a "subset mask," Yen et al. clearly do not disclose or suggest subset masks that are different from one another. Instead, tiling cluster 60 is repeated without deviation in the masks shown in FIG. 6 of Yen et al. Claim 27 is therefore in condition for allowance, as are claims 28-30, which depend on claim 27.

Claims 31-33

Applicant has amended independent claim 31 to include the elements of claim 34, and has canceled claim 34. In particular, claim 31 as amended recites "wherein the controller varies the breadth of the swath during printing by irregularly contracting the breadth of the swath and irregularly expanding the breadth of the swath." The Examiner determined that varying the breadth of the swath during printing by irregularly contracting the breadth of the swath and irregularly expanding the breadth of the swath was not taught or suggested by the prior art of

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record. Accordingly, claim 31 is in condition for allowance. Claims 32-33, which depend on claim 31, are allowable as well.

New Claims:

Applicant has added claims 35-39 to the pending application. The applied references fail to disclose or suggest the inventions defined by Applicant's new claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions.

New independent claim 35 is similar to claim 1, reciting a mask for a laser thermal printer, the mask comprising a first set of first logical values, a second set of first logical values and a set of second logical values. Claim 35 further recites wherein the first set of first logical values is spatially clustered in a first triangle-like shape and the second set of first logical values is spatially clustered in a second triangle-like shape. Claim 35 further recites wherein a boundary between the set of second logical values and the first and second sets of first logical values is an irregular zigzag.

As discussed above in connection with claim 9, none of the cited references discloses an irregular zigzag. Furthermore, the zigzag shown in FIG. 6 of Yen et al. is completely regular, and Yen et al. specifically describe a tiling of clusters that produces a regular zigzag. For these reasons independent claim 35, and dependent claims 36-37, are in condition for allowance.

New independent claim 38 is similar to claim 1, but recites that the first triangle-like shape is defined as a function of a random element. When discussing claim 25 in the "Allowable Subject Matter" section of the Office Action, the Examiner determined that the prior art of record does not disclose or suggest a subset of logical values that is a function of a random element. Independent claim 38 and dependent claim 39 are therefore in condition for allowance.

Allowable Subject Matter:

The Examiner determined that claims 4, 6, 10, 18, 21-22, 25 and 32-34 recited allowable subject matter. As discussed above, Applicant has amended some of the independent claims to include allowable subject matter.

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CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

28 MAY 2004

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